

SUPPORTING STATEMENT
U.S. Department of Commerce
National Oceanic & Atmospheric Administration
Weather and Society Survey and Using Quick Response Surveys to Build a Public Perception and
Response Database
OMB Control No. 0648-XXXX

SUPPORTING STATEMENT PART A

Abstract

In alignment with the Weather Forecasting and Innovation Act of 2017 (Pub. L. 115-25), two data collections are proposed under this request. There are no other collections for which these can be merged.

The first proposed information collection request is sponsored by DOC/NOAA/National Weather Service (NWS)/Office of Science and Technology Integration (OSTI). Currently, NOAA lacks data and data collection instruments that articulate and explicate how individuals receive, interpret, and respond to NOAA information, forecasts, and warnings for severe, winter, and tropical weather hazards. Furthermore, NOAA lacks this type of data longitudinally (i.e., collected over time).

The second proposed collection is sponsored through NOAA's FY2021 Weather Program Office's Social Science Program, and addresses the Social, Behavioral, and Economic Sciences (SBES) component of meeting NOAA's Research and Development (R&D) Vision Areas (2020-2026) to integrate SBES into products, tools, and services that improve weather and air quality forecasting and societal outcomes.

Justification

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

Both collections will address the Weather Research and Forecasting Innovation Act (WRFIA) of 2017. At a high level, the legislation specified that the purpose of the NOAA watch/warning system is to inform action to prevent loss of life and property (Sec. 406), and that any changes to the system must preserve the benefits of the current system and be guided by the findings of social scientific research. Furthermore, WRFIA (Sec. 102) directs NOAA to focus on improving its understanding of how the public receives, interprets, and responds to warnings and forecasts of high impact weather events that endanger life and property.

NOAA responded to this guidance in its 2020-2026 R&D Vision by indicating reductions in societal impacts from hazardous weather in Vision Area #1. For example, Key Question 1.4 asks, "How can NOAA enhance communications, products, and services to enable informed decision-making?" The vision document prescribes that this should be done by first understanding the risk communication process that supports decision-making by the public. However, NOAA currently lacks these types of data, and more specifically, lacks data that articulates and explicates how members of the public receive, interpret, and respond to NOAA information and forecasts during high impact weather events, such as severe, winter, and tropical weather hazards. Thus, NOAA's cannot determine if its messages are widely disseminated, understood, and acted upon. Furthermore, NOAA lacks the longitudinal data needed to

demonstrate if progress or improvements have been made in these areas; therefore, NOAA cannot evaluate performance and satisfy the requirements of the WRFIA.

Documents Cited:

<https://www.congress.gov/bill/115th-congress/house-bill/353/text>

<https://nrc.noaa.gov/LinkClick.aspx?fileticket=z4iHSl3P4KY%3d&portalid=0>

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

For the Weather and Society Survey, the data to be collected via three separate longitudinal surveys and includes questions relating to the receipt, comprehension, and response to severe, tropical, winter information provided by the National Weather Service. Each survey is expected to take 20 minutes to complete.

This study will utilize data from a representative sample of US adults (age 18+) to make aggregate inferences about forecast and warning reception, reliability, and response in all county warning areas (CWAs) and counties in the US. The study will recruit survey participants by contracting with companies who maintain large panels of individuals who sign up to complete internet surveys, such as Qualtrics and Survey Sampling International. These data will be collected annually using the web-based survey interface. This information would be collected at the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) and the University of Oklahoma's Center for Risk and Crisis Management (CRCM). The dataset will be used by the National Weather Service, the National Severe Storms Laboratory, the NOAA Performance, Risk and Social Science Office and their academic partners to conduct analyses and determine the societal impact of information and products.

Respondents will be asked questions about the ways they have received, interpreted, and responded to NWS information, forecasts, and warnings for severe, tropical, and winter weather hazards. Questions about preparedness for specific hazards such as heat waves, tornadoes, and drought may also be included. This data collection serves many purposes, including gaining a better understanding of how key factors within a given population, or organization, vary over time, location, and across different groups; the ability to detect gradual trends or abrupt changes in those factors over time or in response to particular events; and the potential to explore possible correlations and causal relationships with other observed variables of interest. These data will be used by the OSTI in NWS to develop a baseline and performance metrics to improve the information and services it provides and to help members of the weather enterprise answer basic questions about the people in the communities they serve, which is a necessary step towards customizing and improving risk communication, education, and decision support to meet the characteristics of the community, including those in vulnerable populations. The survey data and its associated dashboard will serve as interactive tools to allow NWS forecasters, partners, and policymakers to access and explore data for training and performance evaluation purposes.

For the Quick Response Surveys, the University of Massachusetts Amherst is collecting information on human perception and response to four different hazards: tornados, thunderstorm winds over 70mph, flash floods, and winter weather. Surveys will be created for each of the four hazards using common themes, but tailoring the questions for the specific hazard. The population of interest are adults ages 18 and over, who live in specified counties and metropolitan areas in the United States that are impacted by the different hazards being surveyed.

Online surveys will be implemented and aggregated using Qualtrics survey software that will electronically display the survey on a desktop, tablet or mobile device allowing the public to take the survey whenever and wherever they have internet access. Select forecast offices will distribute the quick response survey using web links on NWS social media and core partners' social media or email lists to obtain a convenience sample. A random sample will also be purchased for a single event. Respondents will only be able to provide information electronically through the web-based survey.

The practical utility of this project will extend to multiple organizational levels within NOAA and to the research community in general. In the short term, NWS forecast offices will have access to standard reports on event specific survey results soon after the collection period ends. NWS Regional offices and NWS Headquarters will be able to aggregate data results across WFOs, hazards, or even warning types, to evaluate higher level trends that could inform region-wide education, warning communications, or SBE, technology, or physical science initiatives. NWS Headquarters can use the surveys as part of NWS Service Assessments to provide a consistent methodology for collecting public response data for these assessments. Based on the transition plan and results of this effort, the data collection and survey system can be the building blocks of a multi-year, cross-sectional database which will be publicly available, and a valuable resource for the broader research community.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.

Both collections will make use of electronic online platforms to collect data in keeping with the Government Paperwork Elimination Act. By using an electronic survey format, this reduces the burden on the NWS, the researchers, and the general public taking the survey.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Question 2

No duplicate effort currently exists, nor can previous information collected be used to address the purpose of this collection. Other related collection efforts such as the NWS Customer Satisfaction Survey (CSS), is a rigorous quarterly survey that provides satisfaction metrics for NWS products and services on a national level; however, it has a national focus, and does not address public perception and response to severe weather events directly at a forecast office level, nor to specific weather events. Thus, unique to this information collection effort is the "bottom-up" approach to data collection, surveying actual response to severe weather events at a forecast office level, as well as this project's potential transition into operations and publicly available database.

5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.

Data will only be collected from a public sample. No small business or other small entities will be impacted.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

If data collection is not conducted, implementation of this new research initiative which directly addresses NOAA's Research and Development (R&D) Vision Areas (2020–2026), Vision Area 1 "Reducing societal impacts from hazardous weather and other environmental phenomena." If these data are not collected, NOAA will continue to be hampered in its efforts to evaluate the social impact of its products, information and services longitudinally.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner inconsistent with OMB guidelines.

This information collection will be conducted in a manner consistent with OMB guidelines.

8. If applicable, provide a copy and identify the date and page number of publications in the Federal Register of the agency's notice, required by 5 CFR 1320.8 (d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

A Federal Register Notice published on September 22, 2021 (86 FR 52649) solicited public comments. No comments were received.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

No incentives will be provided for participation.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy. If the collection requires a systems of records notice (SORN) or privacy impact assessment (PIA), those should be cited and described here.

No Personal Identifiable Information will be collected in this study.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior or attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

No information collected will not be of sensitive nature.

12. Provide estimates of the hour burden of the collection of information.

Information Collection	Type of Respondent (e.g., Occupational Title)	# of Respondents/year (a)	Annual # of Responses / Respondent (b)	Total # of Annual Responses (c) = (a) x (b)	Burden Hrs / Response (d)	Total Annual Burden Hrs (e) = (c) x (d)	Hourly Wage Rate (for Type of Respondent) (f)	Total Annual Wage Burden Costs (g) = (e) x (f)
Severe Weather Longitudinal Survey	General Public	1550	1	1550	.4	620	20.17	\$12,505
Winter Weather Longitudinal Survey	General Public	1550	1	1550	.4	620	20.17	\$12,505
Tropical Weather Longitudinal Survey	General Public	1550	1	1550	.4	620	20.17	\$12,505
QRS - Tornado and Severe Thunderstorm winds 70 MPH+ combined (22%)	General Public	7260	1	7260	.16	1162	\$20.17	\$23,438
QRS - Flash Flood (30%)	General Public	9900	1	9900	.16	1584	\$20.17	\$31,949
QRS - Winter Weather (48%)	General Public	15840	1	15840	.16	2534	\$20.17	\$51,111
Totals				37,650		7,140		144,013

13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected on the burden worksheet).

There are no capital costs or operating and maintenance costs associated with this information collection.

14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information.

Cost Descriptions	Grade/Step	Loaded Annual Salary	% Effort	Fringe (if Applicable)	Cost to Government [a]
Federal Oversight	GS-14/GS-15	\$226,720	23%		\$52,145.60
Total Contract Cost					\$396,855
TOTAL COST TO GOVERNMENT					\$449,001

15. Explain the reasons for any program changes or adjustments reported in ROCIS.

This is a new information collection.

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The individual pieces of information will not be published for the Weather and Society Surveys, but the NWS will maintain a webpage showing aggregate data and its statistics from its survey results.

Results of the Quick Response Surveys are planned to be published externally. The collection period will begin once OMB approval is received and run through June 2023. Analysis will be conducted throughout the project, with final analysis during the summer of 2023. See timeline below. Final project reports will be completed and submitted internally to NOAA by August 2023, reflective of the end of the contract award.

Research results, including methodological processes, and survey topic results, will be shared externally through professional conferences in Year 2, as well as through peer reviewed journals upon completion. Results will also be published as a dataset via the NOAA National Centers Environmental Information website at the completion of the project.

Milestones/Outcomes	8/21-2/22	2/22-6/22	7/22-12/22	1/23-6/23	6/23-8/23
1. Submit research abstract to OMB to begin 60-	X				

day open comment period.					
2. Experimental Design and Testing – Questions, survey flow, and survey triggers	X				
3. OMB and IRB approvals	X				
4. Quota Sampling Strategy developed	X				
5. Survey System Design – Qualtrics software configuration and interfaces.	X				
6. Data Collection I integrating items 2,3,4,5.		X			
7. Data analysis of Y1 results. Modifications to 2,3,4,5 for second data collection effort.			X		
8. Design of probability vs. nonprobability sample experiment.			X		
9. Data Collection II by 9 forecast offices, incorporating 7 and 8.				X	
10. Data Analysis and Evaluation					X
11. Documentation and Evaluation of Experimental design, survey system.					X
12 Publications, conference presentations (AMS, NWA)				X	X

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

The expiration date will be displayed on all application forms.

18. Explain each exception to the certification statement identified in “Certification for Paperwork Reduction Act Submissions.”

The agency certifies compliance with [5 CFR 1320.9](#) and the related provisions of [5 CFR 1320.8\(b\)\(3\)](#).